A FEASIBILITY STUDY

FOR

ESTABLISHING HORSESHOE LAKE CAMP

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MARCH 1989

" This paper was prepared as a student project in partial fulfillment of the requirements of the Professional Development for Outdoor Recreation Management program at Clemson University. It in no way reflects Forest Service policy nor are the opinions expressed those of anyone other than the author."

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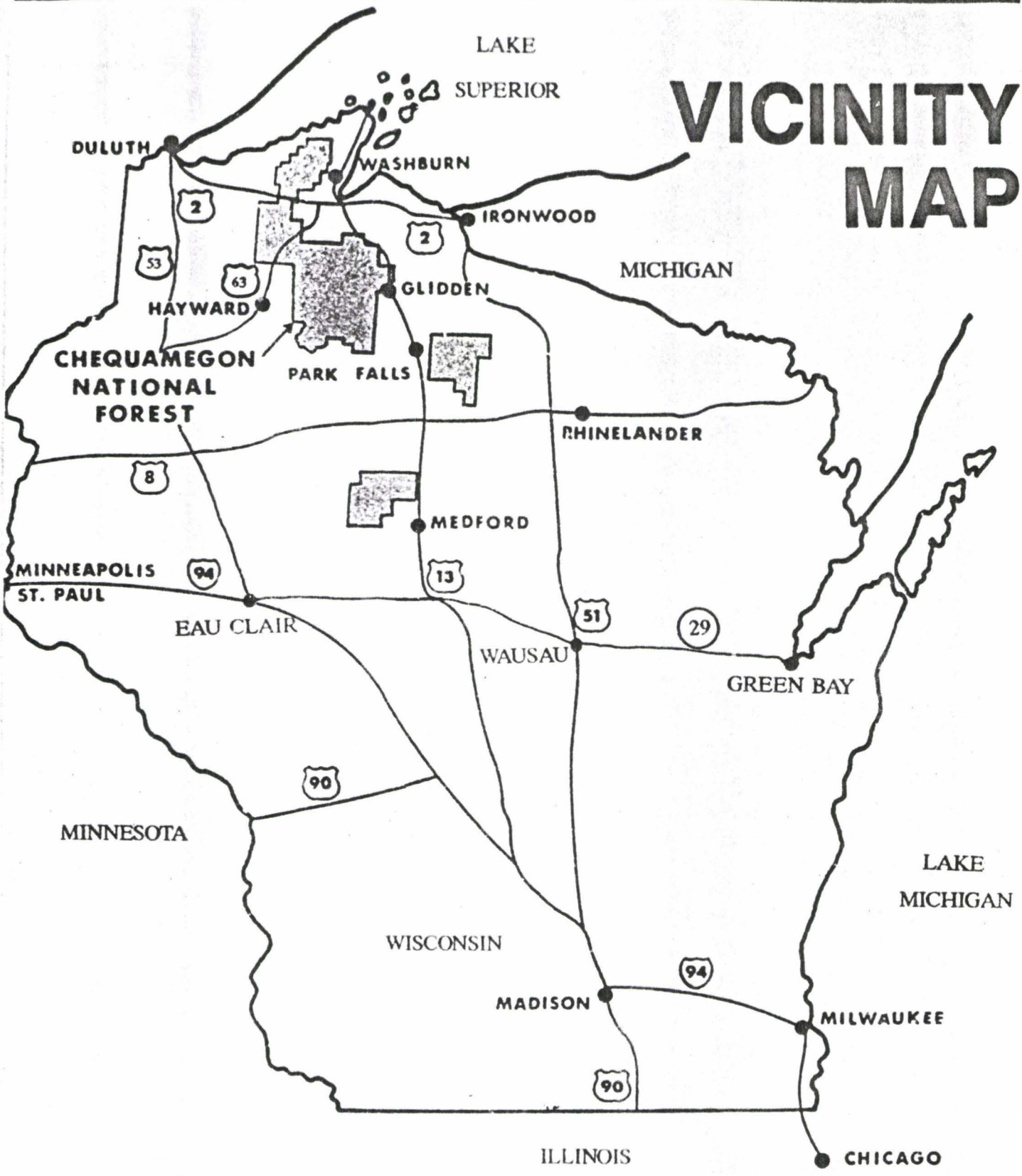
Title: A Feasibility Study for Establishing Horseshoe Lake Camp

Abstract: Interest in developing a campground and horse trail system on the Washburn Ranger District has been growing for a number of years. "User developed" areas and traditional recreation sites that have historically served forest visitors are no longer adequate for this particular use. Many miles of sandy roads and abandoned logging railroad grades provide outstanding opportunities for horseback riding in a forest environment.

Challenges to overcome in order to implement this project include a small labor force, possibly augmented by horse club volunteers, redesignation or rerouting of ATV / snowmobile trails, and maintenance of these "new" trails, perhaps by an adopt-a-trail agreement.

This paper addresses the demand for such a developed area, the physical attributes of the surrounding area, an estimate of development costs, and an indication of support for this project.


VICINITY MAP
LAKE SUPERIOR
DULUTH
WASHBURN
IRONWOOD
MICHIGAN
GLIDDEN
HAYWARD
CHEQUAMEGON NATIONAL FOREST
PARK FALLS
RHINELANDER
MEDFORD
MINNEAPOLIS
ST. PAUL
EAU CLAIR
WAUSAU
GREEN BAY
MINNESOTA
WISCONSIN
LAKE MICHIGAN
MADISON
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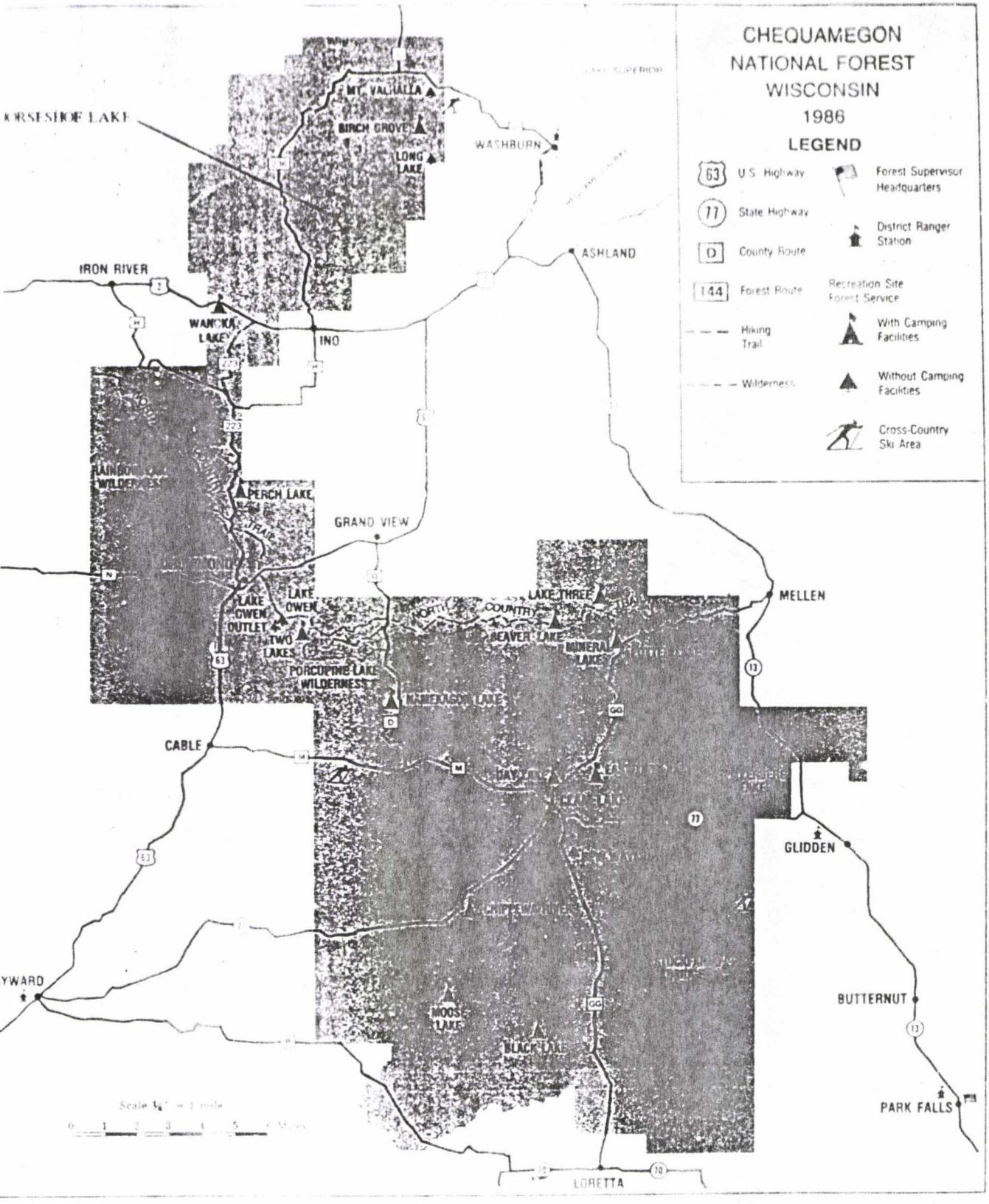
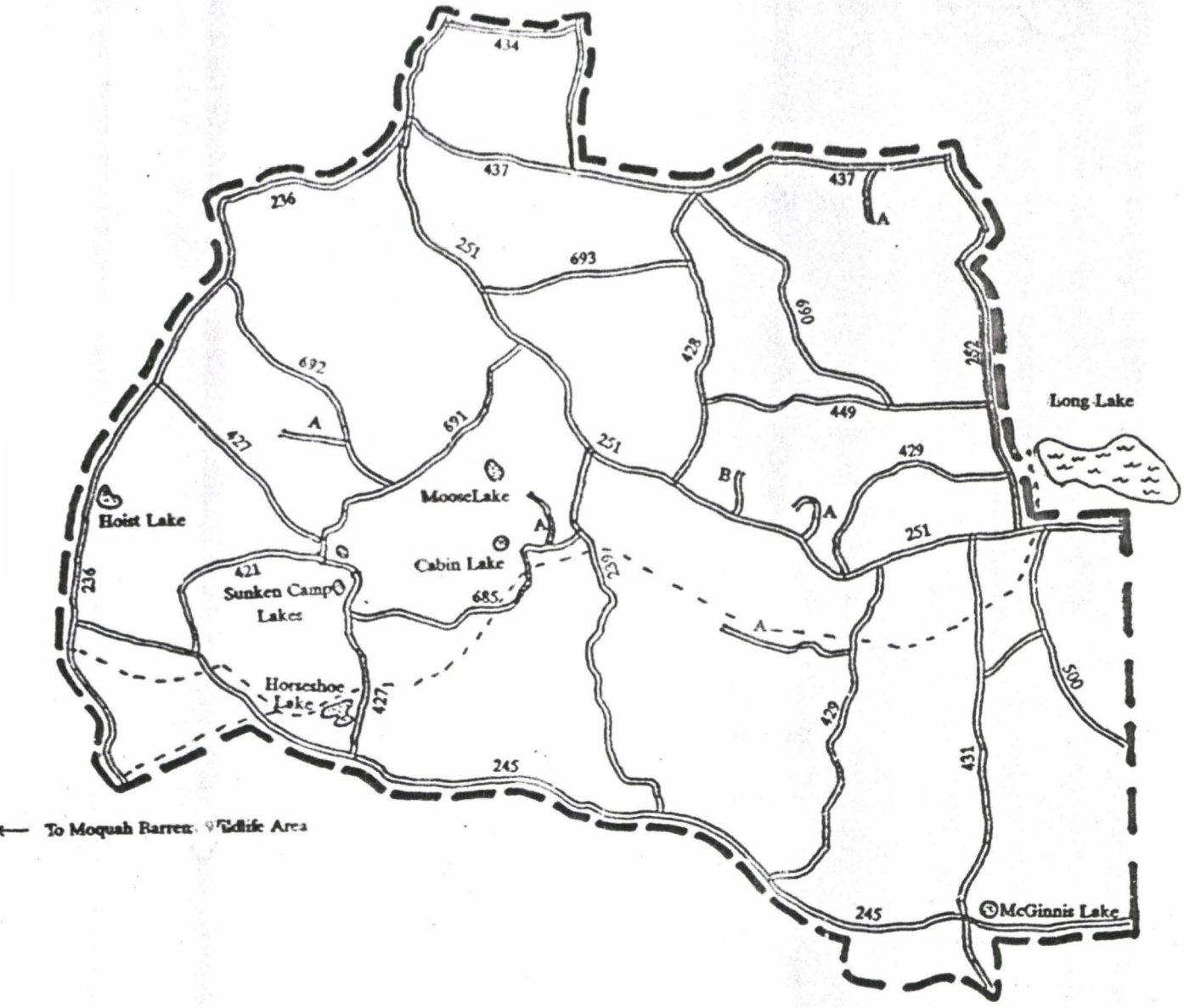


NORTHERN DISTRICT (Glidden, Hayward, Washburn)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Long Lake
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B
Moose Lake
A
Hoist Lake
Cabin Lake
A
251
421
Sunken Camp
Lakes
685
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252
A
Horseshoe
Lake
427
500
429
431
245
245
McGinnis Lake
To Moquah Barrens Wildlife Area

INTRODUCTION

A. Existing Situation

Recreation use data on the Chequamegon National Forest has reflected the increasing public demand for destination points at which to spend leisure time in a growing variety of ways. Present facilities that were constructed many years ago are no longer adequate to serve the expectations of forest visitors who come to enjoy their forest in new and sometimes conflicting ways.

One of the most often described conflicts is that which is seen between non-motorized and motorized recreationists. At this time on the Washburn District, facilities for non-motorized use of trails are non existent north of U.S. highway 2 and problems are developing where all visitors must share one common area despite their incompatibilities. In one particular instance, a collision between a horse and vehicle resulted in personal injuries and the death of the horse. Opportunities exist for the Forest Service to alleviate some of these conflicts by dispersing visitors and providing an improved spectrum of services.

Other conflicts to be resolved are sanitation, water supplies, limited space, and multiple use of trails. These concerns have been expressed to district personnel through public involvement meetings and comments solicited as a result of Opportunity Area Analysis planning. This ties to implementing the Land and Resources Management Plan for the Chequamegon National Forest. Since 1986 the Washburn District has been actively seeking public input on when and where specific activities should take place on the Forest.

Horseshoe Lake Camp is the opportunity to offer equestrians a centrally located destination point that features improvements specifically designed for their needs as they have been presented to our staff.

B. History

The northern unit of the Washburn Ranger District is crisscrossed with many abandoned logging railroad grades that date back to the heydays of Wisconsin logging in the mid to late 19th century. Railroads with such colorful names as The Battleaxe, and Ashland, Siskiwit, and Iron Rvier hauled out many millions of board feet of white pine from the Moquah Barrens. Traces of the St. Croix Stage Road and the Bayfield-Superior Post Road, that meant so much to the settling of the northern part of Wisconsin are still visible as wheel ruts through the area.

The Moquah Barrens Wildlife Area is a featured attraction near Horseshoe Lake that has the notable distinction of being a part of the first National Forest land acquired in Wisconsin in 1929. The ecologically unique barrens, with its' savannah-like character, that is a result of repeated fires, offers a sharp contrast to the surrounding forest.

This area was noted for its' blueberry picking and the above mentioned trains used to bring people out from the towns and drop them off for this single purpose. As more roads pushed into the area, people rode their horses out from the villages and roamed the area. Since the introduction of the automobile far fewer riders have frequented the forest.

In 1935 Horseshoe Lake was the home of Civilian Conservation Corps Company # 3653 that was broken out of Company # 1606 out of Camp Brinks. The CCC boys occupied the site from May through early November when the cold weather got to be too much for them in their tents. Their primary duties were to work at reforestation projects and fire suppression duties as required. 1936 was a bad year for forest fires in northwest Wisconsin and the enrollees were kept busy going from one fire bust to another. The camp was never reoccupied after 1936 by the CCC and some evidence of the camp is still visible near the lake.

II. PURPOSE OF STUDY

This study will examine the desireability and feasibility of constructing a horse camp and an associated network of riding trails in the northern unit of the Washburn Ranger District at Horseshoe Lake. This study responds to public issues and management concerns identified in the Moquah Barrens and Sunken Camp Opportunity Area Analysis Reports that were written for the Management Areas affected by this project. These reports have been written in compliance with direction set forth in the Land and Resource Management Plan for the Chequamegon National Forest.

III. LITERATURE REVIEW

User demand, use trends, and levels of participation were subjects of primary importance to this study. Chequamegon National Forest Recreation Information Management (RIM) data, National Park Service 1982-83 Recreation Survey and the USDA-Forest Service 1980 Assessment of the Forest and Rangeland Situation in the United States offered insight on national trends and participation rates. Local user preferences were brought out in public involvement documents dealing with implementation of the Land and Resource Management Plan of the Chequamegon National Forest in the Management Areas affected by this project and lend strong support for this study.

No research or documentation pertaining to the economic value of such a project to local economies was available for review.

Public involvement meetings and personal contacts with organized user groups and individuals were utilized to establish visitor expectations and garner support for construction and maintenance opportunities. Information from state and other Federal agencies as well as Region 1 and 3 of the Forest Service was collected for review.

IV. METHODOLOGY

To assess the feasibility of implementing the project, it is necessary to analyze the following criteria:

1. Demand for a campground for equestrians.

2. Physical and biological capabilities of the Horseshoe Lake area to sustain such use.

3. Current and projected participation levels.

4. Estimated costs of construction and maintenance of campground and associated trail network.

5. Potential targets for marketing emphasis.

A literature review provided essential demand and use data.

Contacts with users on site and at club meetings led to offers of support in terms of personnel for construction and clearing of trails for the complex.

Discussions with Forest staff and District Opportunity Area Analysis teams affirmed the viability of the project.

V. ANALYSIS

A. Resource Utilization

1. Demand

Pinpointing user demand for a camping area for equestrians in the total absence of any similar type of facility on the Chequamegon National Forest is a challenging undertaking. Research has revealed some user information and internal planning documents offer evidence that is useful in forecasting what the demand might be.

Since the Land and Resources Management Plan for the Chequamegon National Forest was signed in 1986 and the District has sought public opinion on specific projects that forest users would like to see implemented, equestrians have been making their wishes known. A desire for a horse use facility has shown up in 50 percent of the scoping efforts conducted by District interdisciplinary teams. Consequently, these analysis teams are planning to accommodate this concern and are recommending to the leadership team that this sort of project be incorporated into budget planning.

The Resources Planning Act (RPA) Assessment of 1980 emphasizes several indicators that affirm the growing demand for outdoor recreation. Increasing income, positive population growth, more time available for leisure activities, growing numbers of women engaging in outdoor activities and a overall growing awareness of personal fitness needs. Factors that may adversely affect demand are the increasing average age of the population, rising energy costs and the economy in general.

For the period from 1977-2030 the 1980 RPA Assessment forecasts an increase of 61 percent in the demand for land based outdoor recreation opportunities. Closer to the area of study, the North Central Region demand is projected at an increase of 58 percent during the same period of time. The only land based activity that posts higher demand index figures than the 73 percent increase for horseback riding is camping, when medium levels are compared.

The 1983 Strategic Plan for Wisconsin's Forests identifies the National Forests in Wisconsin as the best providers of dispersed recreation opportunities such as camping and horseback riding. Moderate demand increases of 10 percent on the Chequamegon and Nicolet National Forests are predicted to the year 2000. This modest growth rate is reflective of lower population growth rates and escalating travel costs.

Deficiencies in primitive camping chances are predicted in Wisconsin and this demand shortfall is expected to be picked up by the National Forests in the absence of sufficient state and county lands that might sustain this use.

2. Participation Rates

The 1987 Outdoor Recreation and Wilderness Assessment Group, USDA-Forest Service, Southeastern Forest Experiment Station shows in a report of five Federal agencies that during the years 1977-1986, that recreation visit numbers have increased at National Forest areas. While the rate has slowed from rapid rise of the first three years surveyed, it has moved ever upwards and the greatest overall growth of all the agencies was shown by the Forest Service.

Recreation Information Management (RIM) data from the Washburn District has reflected an 8 percent increase in horseback riding from 1985-1987.

Elsner (1985) reports a 35 percent increase in dispersed recreation use activities in the spectrum of total recreation use in the National Forests, from 25 percent in 1941 to 60 percent in 1984.

In the 1988 report Outdoor Recreation in a Nation of Communities, it states, "The Market Opinion Research survey done for the President's Commission on Americans Outdoors confirmed that time spent on outdoor recreation is stable, and that the level of participation by Americans in outdoor recreation activities remains high (89 percent)".

The 1982-1983 Nationwide Recreation Survey under the sponsorship of the National Park Service indicated that 9 percent of those responding engaged in horseback riding and 10 percent engaged in dispersed camping activities. When one adds these figures and views them against the percent of the U.S. population over the age of 12 years, 35 million citizens either ride or use primitive campgrounds for recreation.

3. Conclusions

While there has been a softening of demand for outdoor recreation in the late 1980's that more nearly matches the population growth, it still remains strong on the National Forest System lands. Realizing that recreation demand is of a variable nature, the geographic location of the Chequamegor National Forest sets it in a uniquely different light. The demand for dispersed recreation in Wisconsin on Federal lands remains quite strong for several reasons. State forestry laws that provide for significant tax advantages to the private and corporate land owner make it impossible for them to engage in conducting a recreation enterprise. Keeping this in mind the National Forests in Wisconsin must accommodate the population that historically recreates at less fancy facilities by choice. By offering a new, low key recreation experience, the Washburn Ranger District fulfills a specific recreation need in Wisconsin without impinging on the profitable, developed market that is viewed by many as the province of the private sector.

B. Resource Assessment

1. Comparison Criteria

The inherent capability of the Horseshoe Lake area to offer trail riders a quality recreation experience in a forest setting is a tremendous asset. A Strategic Plan for Wisconsin Forests-1983 lists the following natural amenities as the most valuable assets to a dispersed recreation situation: varied forest types, undeveloped water frontage, and feelings of solitude in a relatively undisturbed environment. Additional attributes that enhance a dispersed recreation experience are environmental variety and opportunities for observing wildlife.

List of Criteria

1. Variety of Forest Types
2. Undeveloped Water Frontage
3. Opportunities for Solitude
4. Environmental Variety
5. Opportunities for Wildlife Observation

2. Site Evaluation

In this section, the question that should be asked is: How well does the Horseshoe lake area conform to the Comparison Criteria as outlined above?

a. The area is 90 percent forested with a visually diverse mix of conifers and deciduous trees that span a range of age classes from young plantations of red and jack pine to 100 year old plus red pine that line the old grades like patient sentinels of a bygone era. Upland openings and communities of scrub red oak provide textural and seasonal color contrasts that further increase the aesthetic appeal of the area.

b. Examination of the water resource shows Horseshoe Lake to be a 10 acre soft water, seepage lake, with a sand littoral bottom. There is nearly a mile of shoreline, in 100 percent federal ownership, that has no improvements on it save a primitive walk-in canoe access on the east side. The fishery is limited to panfish at present with a recommendation to the Wisconsin Department of Natural Resources that the lake be surveyed for potential improvement projects since large mouth bass were stocked there previously.

c. Opportunities for solitude are good although the area is well roaded and several trails cross west of the lake. With a number of routes to choose from, visitors are free to find room to roam at their whim. The fall hunting season brings in the heaviest influx of traffic to the area.

d. The variety of environments that may be visited within a short ride of the Horseshoe Lake area is outstanding. The pitted outwash geology of the region reflects the glacial influence upon the landscape and imparts a rolling, hilly character that calls the curious visitor to find what lies beyond the next rise. The close proximity of conifers to savannahs and deciduous forests makes for vivid contrasts in scenery in a short span of miles and piques the riders interest. Conifers offer a dark, cooling shade, a distinct pine scent to the air and a soothing whisper to those who listen. The birch and aspen provide a well lit setting of brighter greens or cast a golden glow on all things as the fall colors come on. Grassy savannahs of the Moquah Barrens Wildlife Area open upon spacious vistas that are broken by encroaching volunteers of jack pine and aspen. These open spaces in the forest attract the rider with a taste of "big sky" and introduce them to an environment that is maintained through the use of prescribed fire.

e. Wildlife viewing opportunities are very good. Whitetail deer, black bear, coyote, and badger are commonly observed throughout the area. Several species

such as the eastern bluebird and the sharptail grouse require the specific habitat of the Moquah Barrens and strongly influence the management practices employed in the area. Numerous species of raptors take advantage of the thermals and perches that characterize the scene.

The Horseshoe Lake area is easily accessible from U.S. highway 2 via Forest Highway 34 which is paved to within 2.5 miles of the project area. The remaining distance is over sand and gravel forest system roads. These roads are passable by two-wheel drive vehicles from spring through fall under most weather conditions. Two developed Forest Service campgrounds are located within a 10 mile radius, should their amenities be desired.

3. Potential Markets

The Twin Cities of Minneapolis-St. Paul are approximately 150 miles from the Horseshoe Lake area and the Twin Ports of Duluth-Superior are only 50 miles distant. These population centers of over two million people are well within the 200 mile distance that respondents stated they would be willing to travel in order to go camping when interviewed for the 1982-1983 Nationwide Recreation Survey.

Examining the aforementioned cities with a combined population of roughly two million, there appears to be a market that may support this project. If we take the 9 percent of them that may be riders, we project the following as potential visitors who camp and ride.

2,000,000 x .09= 180,000 potential users

Going still further and projecting only 5 percent of this group as users of the Horseshoe Lake Camp, that points to over 9,000 people who could enjoy a recreational experience in the area.

The markets of Madison, Milwaukee, and Chicago are still relatively unexploited according to the Strategic Plan for Wisconsin Forests and the Land and Resource Management Plan for the Chequamegon National Forest. Over 4 million people live in just the metropolitan area of these cities and are within a days' drive of the Washburn Ranger District. This is a market that the Wisconsin Department of Development has identified for northwest Wisconsin to focus on.

4. Conclusions

No matter what light one views this project under, be it statistical projections or physical and biological attributes, one is is swayed to a similar conclusion. The Horseshoe Lake area is well suited to offer a quality recreation experience to horse campers and others who enjoy a rustic camping experience that offers the visitor many choices of routes to wander through a wide variety of habitats.

Horse travel is particularly well suited to the 8700 acre Moquah Barrens Wildlife Area and the 640 acre Moquah Research Natural Area in light of impending restrictions that will limit motorized travel in the area as a result of public input and interdisiplinary team review.

The entire area around Horseshoe Lake can be easily classified by the Recreation Opportunity Spectrum (ROS) system in several categories ranging from semi-primitive non-motorized to roaded natural. Presenting this array of experiences to potential visitors is a definite plus where so much may be presented in such a short ride from a central staging area. (Refer to appendix for descriptions of ROS classes).

C. Cost Estimates

1. Construction

Costs for trail reconstruction should be low since the treadway of the existing trails is in good condition already. Brushing of encroaching woody vegetation will be a major emphasis item on the old railroad grades that can be utilized for horse trails. Until there is a complete ROS classification of the area and trails are designated for non-motorized use, specific costs cannot be forecast with complete accuracy. Trail maintenance and construction/reconstruction costs will vary to some degree according to the ROS class but for this area it is appropriate to use the figure of $100 per mile of trail based on present district costs, including signing. (Conversation with Assistant Ranger, Other Resources, Niles Eilertsen, Washburn Ranger District).

Figuring use of the project area at 100 persons at one time (PAOT), the following improvements are suggested for a point of beginning.

Basic Startup Costs-Site Improvements

2 vault toilets	@ $ 1,500 each=	$3,000
1 driven well	@	$ 5,000
1 pavilion	@	$10,000
6 picnic tables	@ $ 300 each=	$1,800
6 swing over grills	@ $ 300 each	$1,800
2 stock troughs	@ $ 200 each	$ 400
		$22,000

Support for a Horse Camp

Local horse clubs have expressed a willingness to lend support for building and maintaining primative tent camp facilities and trails that are designed for equestrian use. Several club members have access to construction equipment that might be used for land clearing projects. In the past, individual riders have voluntarily cleared trails to improve their riding opportunities.

Bayfield County Tourism and Recreation personnel have voiced their support for developing equestrian facilities on the Forest and currently promote the Chequamegon National Forest in their literature based on the attraction that National Forests have on area visitors.

Forest and District Recreation staff and the District Ranger have expressed support for this project and extended aid where it was needed in this study.

Recommendations to Management

1. As a result of this study, it is recommended that the Horseshoe Lake Camp be developed. Comparison criteria that identify an area for the recommended use have been satisfied. Public involvement efforts on the Washburn Ranger District have indicated strong support for this sort of project.

2. Trails through the Moquah Barrens Wildlife Area be designated for non-motorized to preclude any user conflicts.

3. Contacts with volunteers interested in this project should be enhanced and expanded to assist in reconstruction and maintenance of trails and in site improvement projects. Their "horse sense" should be sought and heeded in the design phase of this project.

4. Construct loop trails of different distances to challenge riders of all skill levels.

5. Direct future marketing efforts toward areas such as the Twin Cities, southern Wisconsin, and the Chicago metroplex. Seek assistance from the Bayfield County Tourism and Recreation Board in these marketing schemes as well as the Wisconsin Department of Development.

6. Contact the Wisconsin Conservation Corps (W.C.C.) work project leader in Ashland and encourage the W.C.C. to incorporate the Horseshoe Lake project into their work plans. This appears to be a logical and fitting move since the original C.C.C. had once worked on the same site over 50 years ago. This may present a good opportunity to publicize the project and the W.C.C. and focus interest on the historic aspect of Horseshoe Lake.

7. Seek assistance from the Forest Archeologist in order to develop a cultural resource interpretive plan for the area that highlights railroads, logging camps, and C.C.C. projects in the area.

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APPENDIX

13—RECREATION OPPORTUNITY SPECTRUM

While the goal of the recreationist is to obtain satisfying experiences, the goal of the recreation resource manager becomes one of providing the opportunities for obtaining these experiences. By managing the natural resource setting, and the activities which occur within it, the manager is providing the opportunities for recreation experiences to take place. Therefore, for both the manager and the recreationist, recreation opportunities can be expressed in terms of three principal components: the activities, the setting, and the experience.

For management and conceptual convenience possible mixes or combinations of activities, settings, and probable experience opportunities have been arranged along a spectrum, or continuum. This continuum is called the Recreation Opportunity Spectrum (ROS) and is divided into six classes (Figure 1). The six classes, or portions along the continuum, and the accompanying class names have been selected and conventionalized because of their descriptiveness and utility in Land and Resource Management Planning and other management applications.

Each class is defined in terms of its combination of activity, setting, and experience opportunities (Table 1). Subclasses may be established to reflect local or regional conditions as long as aggregations can be made back to the six major classes for regional or national summaries. An example of a subclass may be a further breakdown of Roaded Natural into subclasses based on paved, oiled, or dirt surfaced roads, which in turns reflects amount of use, or a further breakdown of Primitive based upon aircraft or boat use.

The Recreation Opportunity Spectrum provides a framework for stratifying and defining classes of outdoor recreation opportunity environments. As conceived, the spectrum has application to all lands regardless of ownership or jurisdiction. It's use in the National Forest System will facilitate the consideration, determination and implementation of the recreation management role.

Figure 1

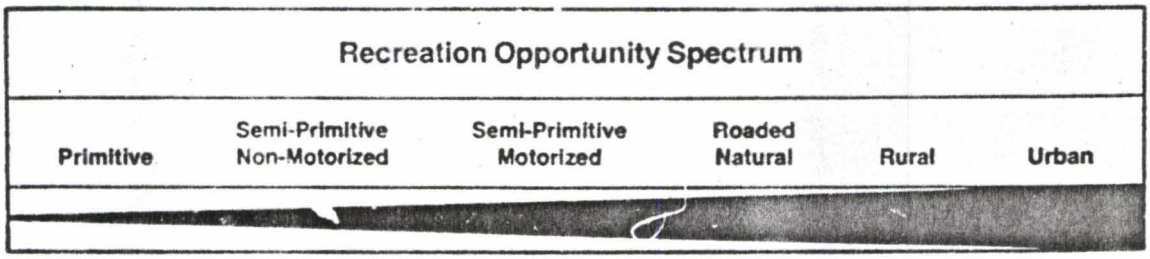


Table 1

ROS Activity Characterization*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Land Based:	**Land Based:**	**Land Based:**	**Land Based:**		
Viewing Scenery	Viewing Scenery	Viewing Scenery	Viewing Scenery		
Hiking and Walking	Automobile (off-road use)	Viewing Activities	Viewing Activities		
Horseback Riding	Motorcycle and Scooter Use	Viewing Works of Human-Kind	Viewing Works of Human-Kind		
Tent Camping	Specialized Landcraft Use	Automobile (includes off-road use)	Automobile (includes off-road use)		
Hunting	Aircraft Use	Motorcycle and Scooter Use	Motorcycle and Scooter Use		
Nature Study	Hiking and Walking	Specialized Landcraft Use	Train and Bus Touring		
Mountain Climbing	Horseback Riding	Train and Bus Touring	Aircraft Use		
	Camping	Aircraft Use	Aerial Trams and Lifts Use		
	Hunting	Aerial Trams and Lifts Use	Hiking and Walking		
	Nature Study	Hiking and Walking	Bicycling		
	Mountain Climbing	Bicycling	Horseback Riding		
		Horseback Riding	Camping		
		Camping	Picnicking		
		Picnicking	Resort and Commercial Services Use		
		Resort and Commercial Services Use	Resort Lodging		
		Resort Lodging	Recreation Cabin Use		
		Recreation Cabin Use	Hunting		
		Hunting	Nature Studies		
		Nature Studies	Gathering Forest Products		
		Mountain Climbing	Interpretive Services		
		Gathering Forest Products	Team Sports Participation		
		Interpretive Services	Individual Sports Participation		
			Games and Play Participation		
Water Based:	**Water Based:**	**Water Based:**	**Water Based:**		
Canoeing	Boating (powered)	Tour Boat and Ferry Use	Tour Boat and Ferry Use		
Other Watercraft (non-motorized use)	Canoeing	Boat (Powered)	Boat (Powered)		
Swimming	Sailing	Canoeing	Canoeing		
Fishing	Other Boating	Sailing	Sailing		
	Swimming	Other Watercraft Use	Other Watercraft Use		
	Diving (skin or scuba)	Swimming and Waterplay	Swimming and Waterplay		
	Fishing	Diving (skin and scuba)	Diving (skin and scuba)		
		Waterskiing and Water-Sports	Waterskiing and Watersports		
		Fishing	Fishing		
Snow and Ice Based:	**Snow and Ice Based:**	**Snow and Ice Based:**	**Snow and Ice Based:**		
Snowplay	Ice and Snowcraft Use	Ice and Snowcraft Use	Ice and Snowcraft Use		
X-Country Skiing/Snowshoeing	Skiing, Downhill	Ice Skating	Ice Skating		
	Snowplay	Sledding and Tobogganing	Sledding and Tobogganing		
	X-Country Skiing/Snowshoeing	Downhill Skiing	Downhill Skiing		
		Snowplay	Snowplay		
		X-Country Skiing/Snowshoeing	X-Country Skiing/Snowshoeing		

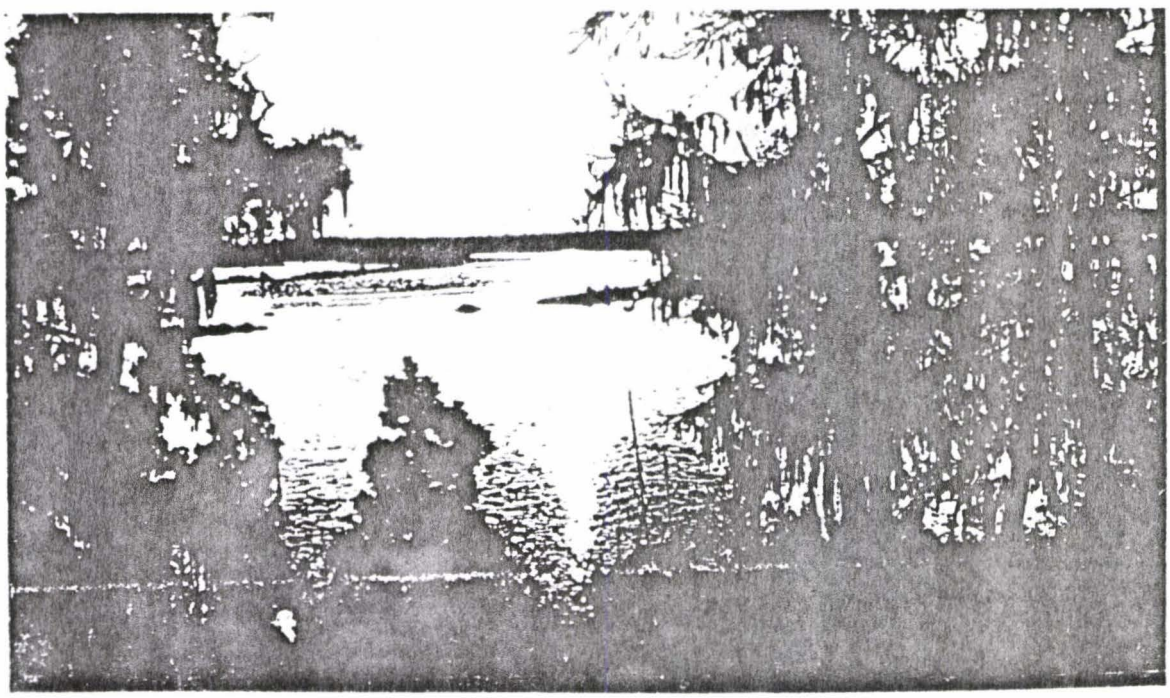
*These activities (from Rl M FSH 2309 11) are illustrative only. Specific additions or exception of activities within a ROS class may occur depending upon local forest situations.

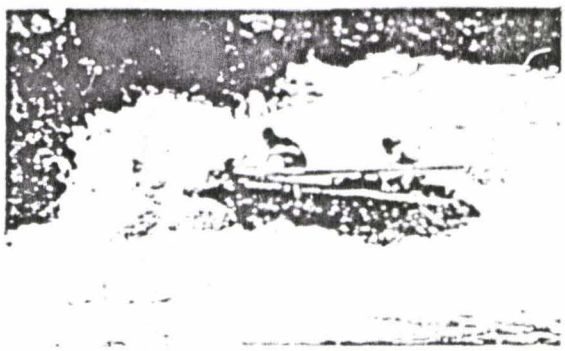
Table 1 (continued)

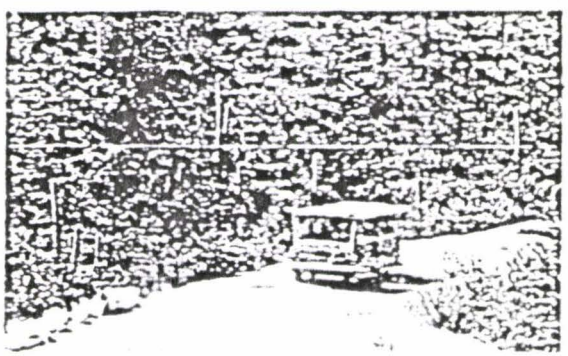
ROS Setting Characterization*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there may be evidence of other users. The area is managed in such a way that only subtle forms of control and restrictions may be present, but are rare. Motorized use is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are rare. Motorized use is permitted.	Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of humans are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.	Area is characterized by a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans on site are predominant. Large numbers of users can be expected both on site and in nearby areas. Facilities for highly intensified motor use and parking are available with forms of mass transit often available to carry people throughout the site.

*This table is for descriptive purposes only. Use the five specific ROS classes (recreation opportunity spectrum classes) in the analysis to delineate areas to which these descriptions apply.







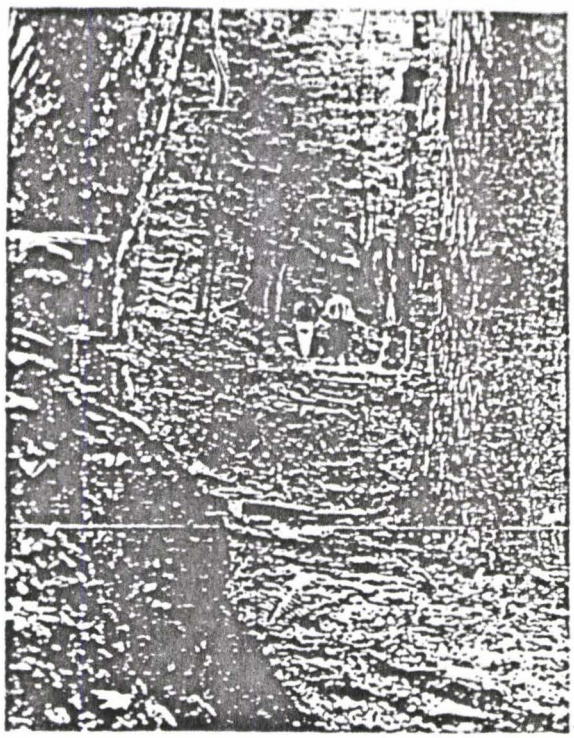


Table 1 (Continued)

ROS Experience Characterization*					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.	High, but not extremely high, probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.	Moderate probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility, and self-reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Opportunity to have a high degree of interaction with the natural environment. Opportunity to use motorized equipment while in the area.	About equal probability to experience affiliation with other user groups and for isolation from sights and sound of humans. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive type of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and non-motorized forms of recreation are possible.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. These factors are generally more important than the setting of the physical environment. Opportunities for wildland challenges, risk-taking, and testing of outdoor skills are generally unimportant except for specific activities like downhill skiing, for which challenge and risk-taking are important elements.	Probability for experiencing affiliation with individuals and groups is prevalent, as is the convenience of sites and opportunities. Experiencing natural environments, having challenges and risks afforded by the natural environment, and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human-influenced parks and open spaces are common.

*These experiences are highly probable outcomes of participating in recreation activities in specific recreation settings.

3—Using the distance guidelines of Table 3 develop a remoteness overlay. Table 3 is only a guide. Lines between Recreation Opportunity Spectrum classes should reflect topographic and vegetative differences which adequately screen out the sights and sounds of humans to the same extent, i.e., the same portion of the spectrum, as the generalized distance guidelines. Relatively flat terrain with low tree cover, or large bodies of water, may require greater distances to achieve screening for remoteness, while deep canyons or heavily wooded terrain might provide equivalent screening with less distance. The fundamental determinant is the type of experience opportunities which either currently exist or might exist given the alternative management prescription assumptions.

a. Step One—In developing the remoteness overlay it is often easiest to begin by drawing the lines separating the Roaded Natural class from the Semi-Primitive Motorized class. This in effect divides the spectrum, with areas on one side of the line either Primitive or Semi-Primitive, and areas on the other side Roaded Natural, Rural, or Urban. The Roaded Natural, Rural, and Urban classes are distinguished from one another using the Evidence of Humans criteria in Table 5 page 22. No further separation therefore occurs in the relation to the remoteness criteria.

b. Step Two—Next delineate the Semi-Primitive Motorized class by a line approximately one-half mile—depending upon vegetation and terrain—from primitive roads and trails with motorized use. The Semi-Primitive Nonmotorized and Primitive portion of the spectrum now remain.

c. Step Three—Finally, delineate the Primitive class by a line approximately three miles from all roads, railroads, or trails with motorized use. All areas between the Primitive class line and Semi-Primitive Motorized line, are classified as Semi-Primitive Nonmotorized.

Table 3

Remoteness Criteria*					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
An area designated at least 3 miles from all roads, railroads or trails with motorized use	An area designated at least ½-mile but not further than 3 miles from all roads, railroads or trails with motorized use; can include the existence of primitive roads and trails if usually closed to motorized use.	An area designated within ½-mile of primitive roads or trails used by motor vehicles; but not closer than ½-mile from better than primitive roads.	An area designated within ½-mile from better than primitive roads, and railroads.	No distance criteria.	No distance criteria.

*The criteria can be modified to conform to natural barriers and screening, or other relevant features of local topographic relief and vegetative cover. This fits the criteria to the actual Forest landscape.

21.22—SIZE OF AREA—Size of area is used as an indicator of the opportunity to experience self-sufficiency as related to the sense of vastness of a relatively undeveloped area. In some settings application of the remoteness criteria (Table 3) assures the existence of these experience opportunities; in other settings the remoteness criteria alone do not. Therefore, apply the size criteria, Table 4, to the map or overlay developed using the remoteness criteria to insure that the appropriate experience opportunities are available.

Table 4

Size Criteria					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
5,000 acres*	2,500 acres**	2,500 acres	No size criteria.	No size criteria.	No size criteria.

*May be smaller if contiguous to Semi-Primitive Nonmotorized Class.
**May be smaller if contiguous to Primitive Class.

1—Area Adjustments—Situations where an area identified on the remoteness overlay is slightly smaller than the size criteria for a Primitive or Semi-Primitive class—or the area is a unique entity for some other reason—may require individual consideration. If the area is sufficiently added to, or buffered by, the next contiguous class it may still provide the kinds of opportunities which would more certainly occur if the area were larger. The decision as to whether this condition applies—or as to whether the area is for some other reason unique relative to the surrounding area and provides a given class of opportunity in spite of its size (e.g., an island)—requires local knowledge of the area and its features on the part of the planner.

21.23—EVIDENCE OF HUMANS—Evidence of Humans is used as an indicator of the opportunity to recreate in environmental settings having varying degrees of human influence or modification.

Apply the Evidence of Humans criteria given in Table 5 to determine whether the impact of human modification on the landscape is appropriate for each class designation on the inventory overlay. If the Evidence of Humans is more dominant than indicated for the designated Recreation Opportunity Spectrum class, adjust the class boundaries on the overlay so the designations accurately reflect the situation. If the class boundaries change markedly reevaluate the size of the classes (Table 4) to make sure size remains adequate.

The Evidence of Humans criteria for each Recreation Opportunity Spectrum class is primarily based on the visual impact and affect of modifications on the recreation experience, as distinguished from only the physical existence of modifications. The criteria take into account the variation in visual absorption capacity of different landscapes.

1—Evidence of Humans Criteria and the Visual Management System—While in some ways it seems possible to equate Visual Quality Objectives, or a range of objectives, with each Recreation Opportunity Spectrum class the function of the Evidence of Humans Criteria in the Recreation Opportunity Spectrum is not the same as Visual

Quality Objectives in the Visual Management System and equating the two is not recommended. For example, middle and background Visual Management System areas are often where Primitive and Semi-Primitive Recreation Opportunity Spectrum classes occur. A retention or partial retention Visual Quality Objective given to such an area for management direction could have a vastly different meaning than the delineated Recreation Opportunity Spectrum class.

Thus identify the Recreation Opportunity Spectrum classes through the setting descriptions in the Evidence of Humans Criteria, Table 5, and not through use of Visual Quality Objectives. To assist in this, the Evidence of Humans Criteria are purposely worded differently than the definitions of Visual Quality Objectives.

Forests which have completed an Existing Visual Condition inventory as part of their Visual Management System can use this information to assist in using the Evidence of Humans Criteria. However, interpretation of Existing Visual Condition data (short of determining Visual Condition Type) on location and size of existing human activities can be a helpful aid in determining the Recreation Opportunity Spectrum class.

Table 5

Evidence of Humans Criteria

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Setting is essentially an unmodified natural environment. Evidence of humans would be unnoticed by an observer wandering through the area.	Natural* setting may have subtle modifications that would be noticed but not draw the attention of an observer wandering through the area.	Natural* setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails and primitive roads within the area.	Natural* setting may have modifications which range from being easily noticed to strongly dominant to observers within the area. However from sensitive** travel routes and use areas these alterations would remain unnoticed or visually subordinate.	Natural* setting is culturally modified to the point that it is dominant to the sensitive** travel route observer. May include pastoral, agricultural, intensively managed wildland resource landscapes, or utility corridors. Pedestrian or other slow moving observers are constantly within view of culturally changed landscape.	Setting is strongly structure dominated. Natural or natural-appearing elements may play an important role but be visually subordinate. Pedestrian and other slow moving observers are constantly within view of artificial enclosure of spaces.
Evidence of trails is acceptable, but should not exceed standard to carry expected use.	Little or no evidence of primitive roads and the motorized use of trails and primitive roads.	Strong evidence of primitive roads and the motorized use of trails and primitive roads.	There is strong evidence of designed roads and/or highways.	There is strong evidence of designed roads and/or highways.	There is strong evidence of designed roads and/or highways and streets.
Structures are extremely rare.	Structures are rare and isolated.	Structures are rare and isolated.	Structures are generally scattered, remaining visually subordinate or unnoticed to the sensitive** travel route observer. Structures may include power lines, micro-wave installations and so on.	Structures are readily apparent and may range from scattered to small dominant clusters including power lines, microwave installations, local ski areas, minor resorts and recreation sites.	Structures and structure complexes are dominant, and may include major resorts and marinas, national and regional ski areas, towns, industrial sites, condominiums or second home developments.

*In many southern and eastern forests what appears to be natural landscapes may in actuality have been strongly influenced by humans. The term natural-appearing may be more appropriate in these cases.

**Sensitivity level 1 and 2 travel routes from Visual Management System USDA Handbook 461

Table 6

Social Setting Criteria*

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Usually less than 6 parties per day encountered on trails, and less than 3 parties visible at campsite.	Usually [illegible] parties per day encountered on trails, and less than [illegible] visible at campsite.	Usually [illegible] parties per day encountered on trails, and less than [illegible] visible at campsite.	Frequency of contact is Moderate to High on trails, Low to Moderate on trails and away from roads.	Frequency of contact is Moderate to High in developed sites, on roads and trails, and water surfaces. Moderate away from developed sites.	Large numbers of users onsite and in nearby areas.

*These criteria apply during the typical [illegible] Specific numbers must be developed for [illegible]

In areas of concentrated use the social setting criteria may not result in the same Recreation Opportunity Spectrum class as the physical setting criteria for the area. When this occurs a "setting inconsistency" is taking place. Setting inconsistencies are discussed in Section 21.5.

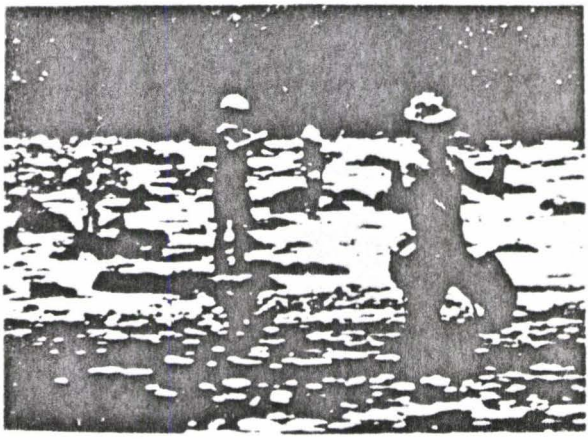
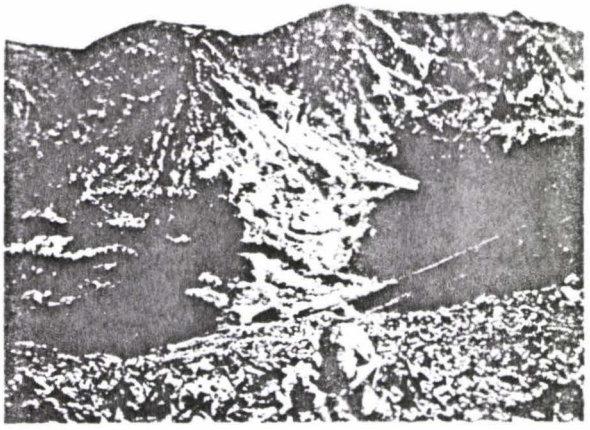


Table 7

Managerial Setting Criteria

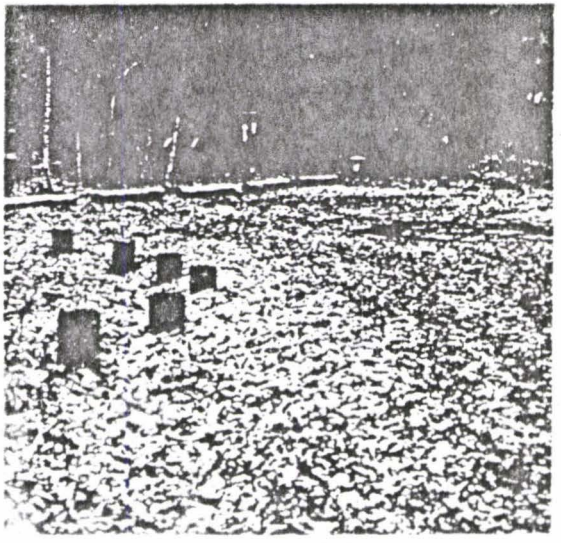
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
				Regimentation and controls obvious and numerous. Largely in harmony with the man-made environment	Regimentation and controls obvious and numerous.



HORSE BACK RIDERS
PLEASE FOR YOUR SAFETY
AND OTHERS KEEP YOUR
HORSES ON BRIDLE TRAILS
DO NOT RIDE ON ROADS
OR IN PICNIC AREAS

21.4—MANAGERIAL SETTING—The managerial setting reflects the amount and kind of restrictions placed on people's actions by the administering agency or private landowner which affect recreation opportunities.

21.41—MANAGERIAL SETTING MAPPING—Apply the managerial regimentation and noticeability criteria in Table 7. Place the information on the social setting overlay, or on the physical setting overlay if a separate social setting is not used. Label the information for future identification.



United States
Department of
Agriculture

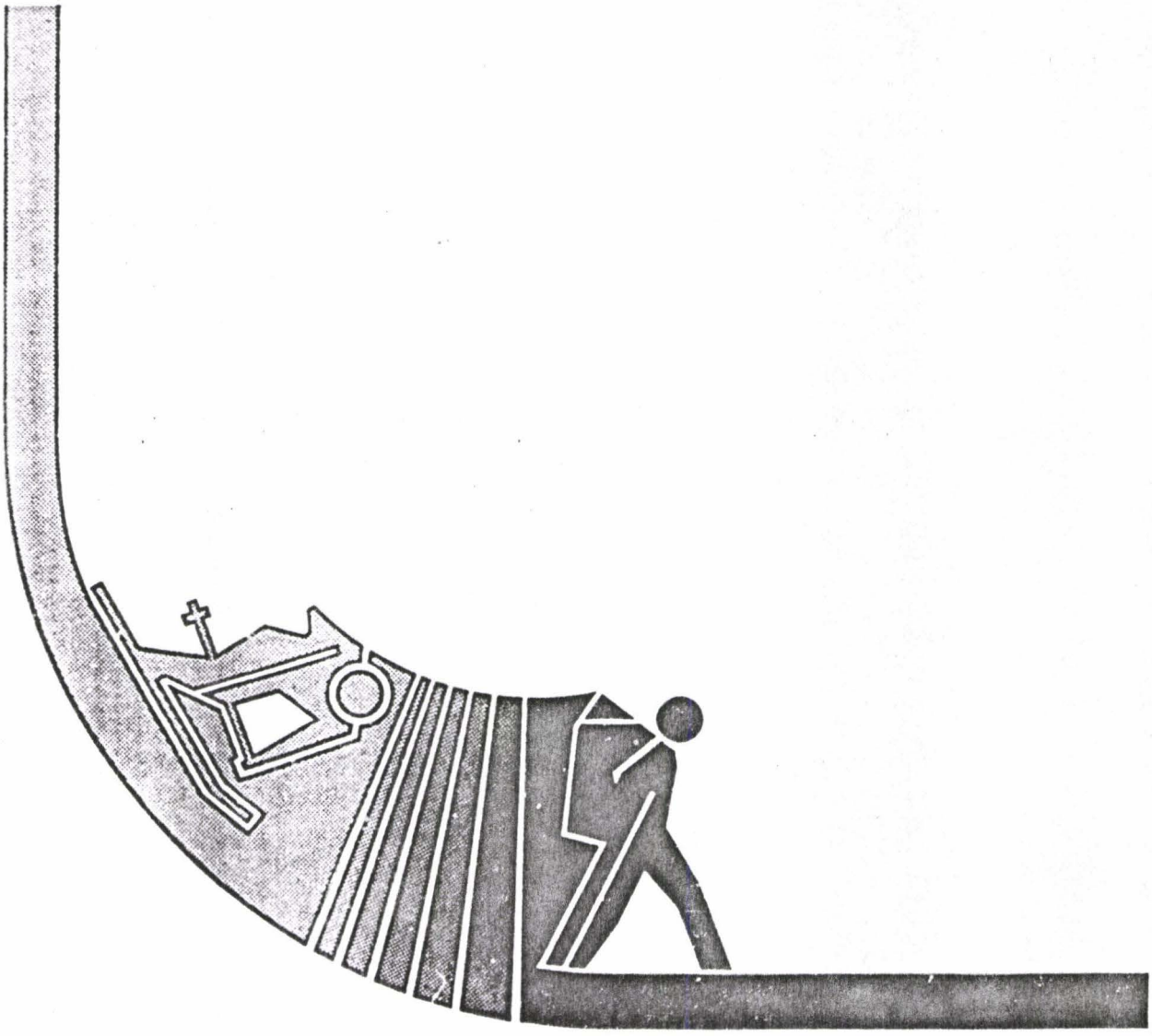
Forest
Service

Eastern
Region

ROS

Users Guide

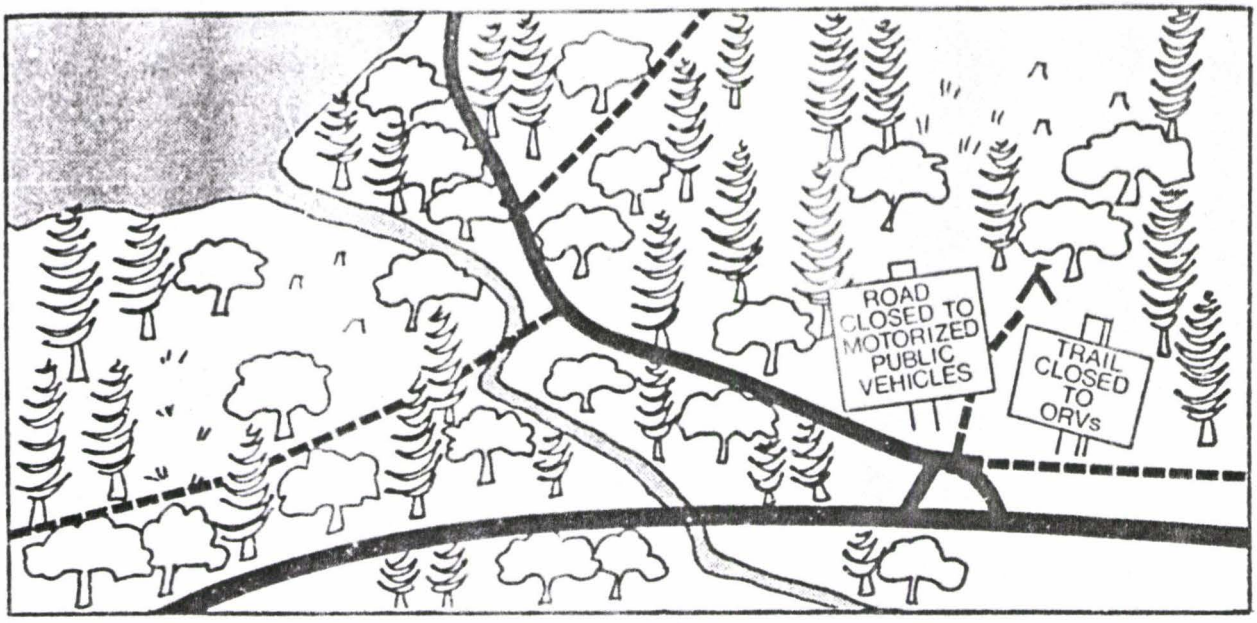
EASTERN REGION SUPPLEMENT



September 1985

SEMI-PRIMITIVE NONMOTORIZED ROS CLASS

FIGURE 4



SEMI-PRIMITIVE NONMOTORIZED ROS CLASS GOAL EMPHASIS/OBJECTIVES

This Forest is characterized by its predominant natural or natural appearing environment. Openings are a result of natural or man-caused occurrences. Forest is accessible by foot or on horseback. There is no motorized use by the public. Occasional administrative use may be conducted using motor vehicles. Visitor interaction is low. There is evidence of other users. Area is 2500 acres or larger and is located at least 1/2 mile but no further than 3 miles from all roads, railroads, and trails with motorized use. There are minimum on-site controls and restrictions. The recreational experience provides for a high probability of experiencing isolation, remoteness, independence, closeness to nature, self reliance with challenge and risk present. Management Goals include (1) maintaining the natural or natural appearing environment and (2) providing a nonmotorized Semi-Primitive recreational experience. Most Regional Wildernesses will be inventoried as Semi-Primitive nonmotorized ROS Class because of past use and proximity of motorized roads and trails.

ACTIVITIES

Viewing scenery, hiking, cross-country ski touring, horseback riding, canoeing, sailing, swimming, fishing, photography, camping, hunting, and nature study.

STANDARDS AND GUIDELINES

1. Provide 1/2 to 2 miles per square mile of foot and/or horse trail.
2. Roads and trails normally closed to public motor vehicle travel.
3. Trails are maintained for foot and/or horse use.
4. Trail maintenance for protection of resources and public safety.
5. Campsite facilities authorized for resource protection and may include toilet, fire ring, and tent pad.
6. Developed facilities contain no more than 10 sites and are Development Level 1. See Figure 8 for facilities compatible with this Management Area.
7. Non-recreational activities

scheduled for days, weeks, periods, seasons of low or no recreational use.

8. Visual quality objectives of preservation, retention are normal; objective of partial retention is incompatible.
9. Noisy power/mechanical tools may be used in management activities but scheduled during periods of low or no recreation use.
10. Motorized use period may be scheduled with corresponding change to SPM class and proper notification to public.
11. Native materials used in construction of recreation facilities.
12. Informal interpretive services provided through publications.
13. Conduct cultural resource surveys, stabilization and preservation of sites.
14. Determine Limits of Acceptable change for social and resource protection purposes.
15. Trail standards suitable for SPNM only.
16. Signing for safety and administrative use. Signs show destinations, mileage, regulatory, and safety messages.
17. Camping generally permitted throughout area.
18. Trail reassurance provided by blaze marks on trees only.
19. Trail tread width no wider than 18 inches.
20. Low density road system may be used for nonmotorized recreational purposes.
21. Fords, low water bridges, and rustic simple bridge designs provide drainage crossings.
22. Vegetative management enhances recreational experience and, where appropriate, designed to achieve objectives for Management Area.
23. Roads limited to Traffic Service Level C and/or D.

IMPLEMENTATION ACTIONS

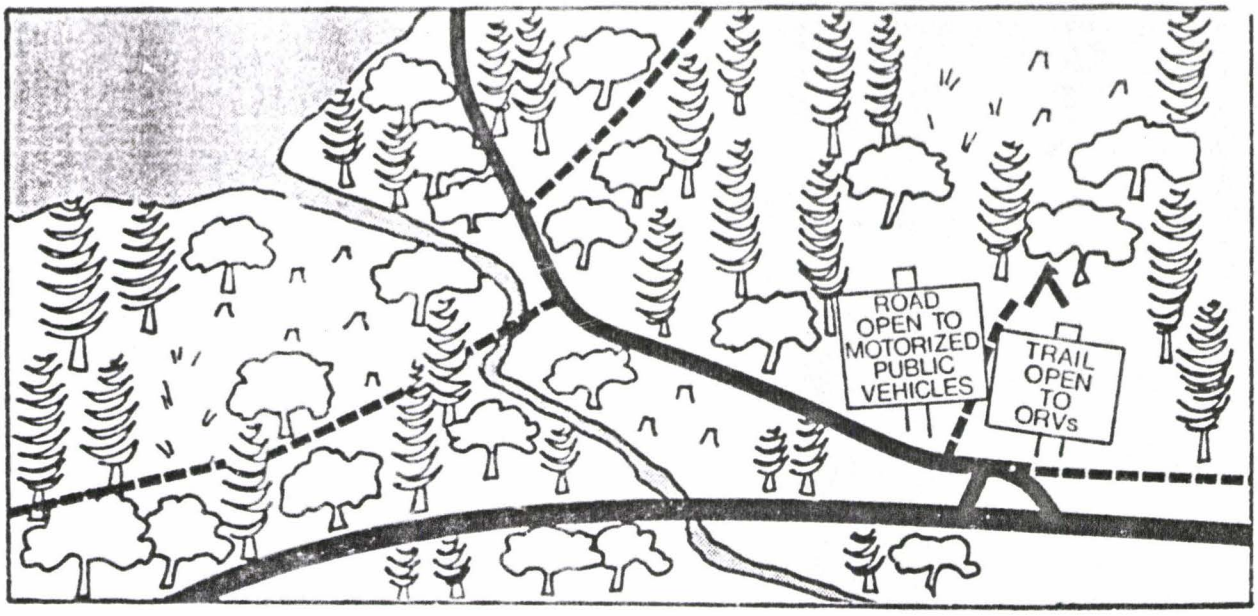
Trail operation and maintenance
Visitor contact and patrol
Volunteer Supervision
Establish limits of Acceptable Change
Drainage crossing construction and maintenance
Road construction and maintenance
Other resource management actions compatible with area
Trail construction
Volunteer supply
Cultural Resource surveys, stabilization, preservation
Light facility construction and maintenance
Vegetative manipulation to meet recreational objectives of area
Road operation/maintenance

MONITORING ACTIONS

Limits of acceptable change
Maintenance of ROS Class
Visitor Density
Visual Quality
Work project construction and mtce.
Conduct of administrative activities
Facility scale and maintenance

SEMI-PRIMITIVE MOTORIZED ROS CLASS

FIGURE 5



SEMI-PRIMITIVE MOTORIZED ROS CLASS GOAL EMPHASIS/OBJECTIVES

This Forest is characterized by its predominant natural or natural appearing environment. Openings are a result of natural or man-caused occurrences. Forest is accessible by foot, horseback, or motor vehicle. Administrative use may be conducted at times using motor vehicles. Visitor interaction is low. There is evidence of other users. Area is 2500 acres or larger and is located at least 1/2 mile from paved or aggregate surfaced roads with motorized use by passenger cars. There are minimum on-site controls and restrictions. The recreational experience provides for a high probability of experiencing isolation, independence, closeness to nature, self reliance with challenge and risk present. Management Goals include (1) maintaining the natural or natural appearing environment and (2) providing a motorized Semi-Primitive recreational experience.

ACTIVITIES

Viewing scenery, hiking, cross-country ski touring, horseback riding, canoeing, sailing, swimming, fishing, photography, camping, hunting, motorcycle, scooter, all terrain vehicle, bicycle, 4-wheel vehicle use and nature study.

STANDARDS AND GUIDELINES

1. Provide from 1/2 to 2 miles per square mile of foot, horse, or motor trail.
2. Roads and trails may be open or closed to public motor vehicle travel.
3. Trails maintained for foot, horse or specific motor vehicle use.
4. Trail maintenance is for protection of resources and public safety.
5. Campsite facilities authorized for resource protection and include toilet, fire ring, and tent pad.
6. Developed facilities will contain no more than 10 sites and are Development Level 1. See Figure 8 for facilities compatible with this Management Area.

7. Non-recreational activities scheduled for days, weeks, periods, seasons of low or no recreational use.
8. Visual quality objectives of preservation, retention are normal; objective of partial retention is normal from sensitive roads and trails.
9. Noisy power and mechanical tools used in conduct of management activities should be scheduled during periods of low or no use.
10. Non-motorized use period may be scheduled with corresponding change to SPNM class and proper notification to public.
11. Native materials used in construction of recreation facilities.
12. Informal interpretive services are provided through publications.
13. Conduct cultural resource surveys, stabilization and preservation of sites.
14. Determine Limits of Acceptable change for social and resource protection purposes.
15. Trail standards will be suitable for SPNM and SPM.
16. Signing for safety and administrative use. Signs sho destinations, mileage, regulatory, and safety messages.
17. Camping generally permitted throughout area.
18. Trail reassurance provided by blaze marks on trees only.
19. Trail tread width no wider than 48 inches.
20. Low density road system may be used for non-motorized recreational purposes or can be restricted to specific vehicles.
21. Fords, low water bridges, and rustic simple bridge designs provide drainage crossings.
22. Vegetative management will enhance recreational experience and where appropriate be designed to achive objectives for Management Area.
23. Roads limited to Traffic Service Level C and D.

IMPLEMENTATION ACTIONS

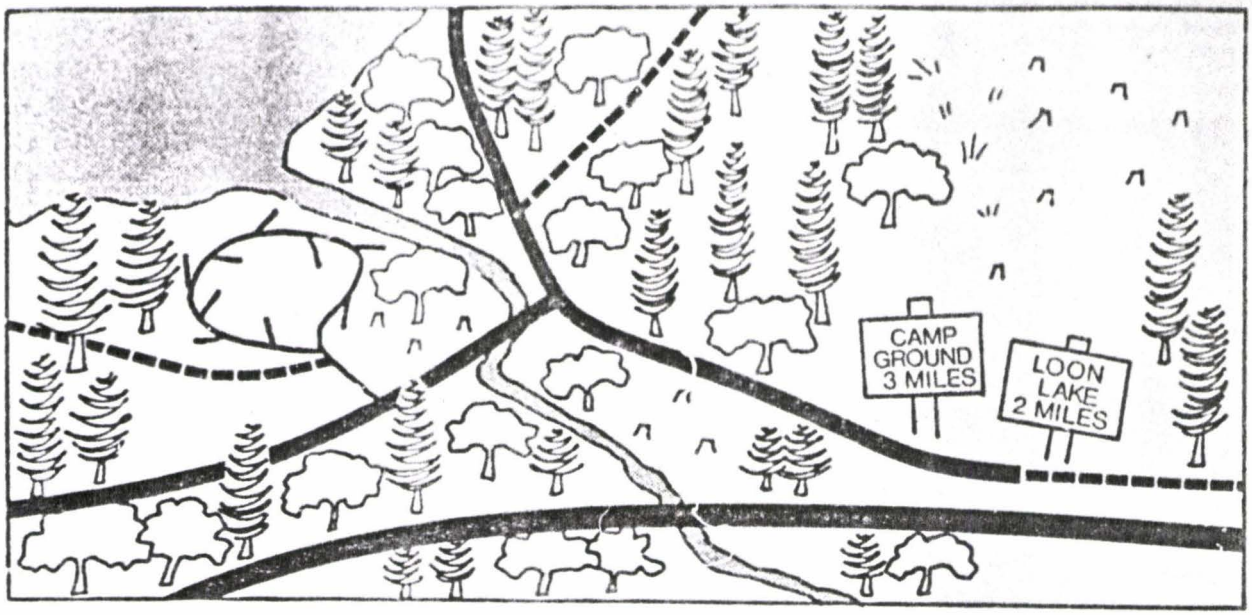
Road operation and maintenance
Trail operation and maintenance
Visitor contact and patrol
Volunteer Supervision
Establish Limits of Acceptable Change
Drainage crossing construction and maintenance
Road construction
Other resource management actions compatible with area
Trail construction
Volunteer supply
Cultural Resource surveys, stabilization, preservation
Developed facility construction and maintenance
Vegetative manipulation to meet recreational objectives of area

MONITORING ACTIONS

Limits of acceptable change
Maintenance of ROS Class
Visitor Density
Visual Quality
Work project construction and mtce.
Conduct of administrative activities
Facility scale and maintenance

ROADED NATURAL ROS CLASS

FIGURE 6



ROADED NATURAL ROS CLASS GOAL EMPHASIS/OBJECTIVES

This Forest is a mosaic of different age classes and groupings appearing as a predominantly natural environment. Openings are noticeable throughout the Forest and are the result of natural and man-caused occurences. Forest is accessible by foot, horseback, and motorized vehicles. Visitor interaction is low to moderate. Evidence of other users is prevelent. There are no size limitations on areas with this Class. A system of roads and trails permits entry for a variety of management purposes and may be open or closed to specific vehicles or types of uses. Resource modification and utilization takes place but is harmonized with environment. Recreation experiences allow affiliation with groups or isolation from sights and sounds of man at different times and places. Few opportunities for challenge or risk. Management Goals include (1) maintaining a predominantly natural appearing environment (2) producing a variety of resource outputs and uses, and (3) providing motorized or non-motorized recreational activities in a developed or undeveloped setting.

ACTIVITIES

Viewing scenery, hiking, cross-country ski touring, bicycling, horseback riding, canoeing, sailing, swimming, fishing, photography, camping, hunting, nature study, motorized ice and snowcraft, off-road vehicles, ORV touring, power boating, picnicking, gathering forest products, downhill skiing, water skiing and other water sports, viewing interpretive signs, resort and commercial public services, and resort lodging.

STANDARDS AND GUIDELINES

1. Provide up to 3 miles per square mile of foot, interpretive, handicapped, bicycle horse, or motorized trail.
2. Roads and trails open or closed to public motorized vehicle travel.
3. Trails maintained for foot, horse, bicycle, or specific motor vehicle use.

4. Trail maintenance for protection of resources, public safety, and convenience.
5. Campsite facilities authorized for resource protection and may include toilet, fire ring, tent pad, table, and water supply.
6. Developed facilities contain no more than 100 sites Development Level 1 through 3. See Figure 8 for facilities compatible with the ROS Class.
7. Visual Quality Objectives (VQO) range from Preservation through modification. The VQO of Maximum Modification is incompatible.
8. ROS Class may be subdivided to maintain nonmotorized characteristics.
9. Interpretation range from informal types through publications to constructed visitor centers.
10. Artificial construction materials used for recreational facilities only when suitable native or natural materials unavailable.
11. Survey, stabilize, preserve, and interpret cultural resources.
12. Determine limits of acceptable change in areas where sensitive resources found or where overuse may become a problem.
13. Trail standards meet Roaded Natural or Semi-Primitive setting characteristics.
14. Signing for safety, information, interpretion, and administrative uses. Signs provide full range of messages needed for management purposes.
15. Camping permitted throughout area. Camping within developed sites is confined to designated sites.
16. Trail reassurance provided with tree blaze marks, paint, or plastic or metal markers.
17. Trail tread width varys according to uses for which it is designed. Tread width for motorized trails will not exceed 45 inches.
18. Moderate density road system used for non-motorized or motorized recreational purposes. Roads may be closed to accomodate specific uses or vehicles.
19. Drainage crossings provided by structures or means appropriate to the desired uses and settings.

IMPLEMENTATION ACTIONS

Road operation and maintenance
Trail operation and maintenance
Visitor contact and patrol
Volunteer Supervision
Establish limits of Acceptable Change
Drainage crossing construction and maintenance
Road and trail construction
Cultural Resource surveys, stabilization, preservation and interpretation
Developed facility construction and maintenance
Vegetative manipulation to meet resource and recreation objectives
Other resource management actions prescribed for area

MONITORING ACTIONS

Limits of Acceptable Change
Maintenance of ROS Class
Visitor Density
Visual Quality
Work project construction and mtce.
Conduct of administrative activities
Facility scale and maintenance